

REMARKS

This amendment is responsive to the Office Action dated November 5, 2002. Applicants have amended claims 1, 2, 4, 5, and 9, cancelled claim 3, and added claims 10-12. Claims 1, 2 and 4-12 are pending. A version of the amended claims showing changes pursuant to 37 CFR § 1.121(c)(ii) is attached. In the attached version of the amended claims, Applicant has used underlines to indicate inserted matter and strikeouts to indicate deleted matter.

Claim Rejections Under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 1-3 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,608,391 to Bantli et al. ("Bantli et al. '391"). Applicant has cancelled claim 3, and amended claim 1 to include subject matter similar to that of originally filed claim 3. Applicant respectfully traverses these rejections to the extent such rejections may be considered applicable to the amended claims. Bantli et al. '391 fails to disclose each and every feature of the claimed invention, as required by 35 U.S.C. 102(b), and provides no teaching that would have suggested the desirability of modification to include such features.

For example, Bantli et al. '391 fails to teach or suggest a combination tag comprising a retroreflective article having an optical article and a reflective layer, wherein the reflective layer comprises a metallized ink deposited on at least a portion of a structured surface of the optical article, as recited by Applicant's independent claim 1 as amended. Furthermore, Bantli et al. '391 fails to teach or suggest the use of a metallized ink that includes a polymer carrier and a non-contiguous metal particles, as recited by Applicant's claim 2 as amended.

With regard to these elements of claim 1, as amended, the Examiner stated that Bantli et al. '391 "teaches a system wherein the reflective layer is a metallized ink or coating (col. 5, lines 52-56)." However, this passage of Bantli et al. '391 describes a "retroreflective sheeting" that may contain a "vapor coat layer." Contrary to the Examiner's assertion, Bantli et al. '391 makes no mention of the use of metallized ink as a reflective layer, as recited in Applicant's claim 1, and refers instead to a layer of vapor-deposited metal. Moreover, Bantli et al. '391 itself describes how a vapor coat layer "disrupts a radiation pattern if an antenna is placed behind the retroreflective sheeting." In fact, U.S. Patent 5,621,571 to Bantli et al. ("Bantli et al. '571"), also

cited by the Examiner, states that vapor-deposited aluminum acts as a "conductive plane" and renders an antennae placed behind it "ineffective."

In direct contrast with these references, Applicant's application describes how a metallized ink may be used to produce a retroreflective value that visually approximates a vapor coated retroreflective sheeting, yet provides radio frequency-responsiveness.¹ Applicants respectfully submit that the Examiner's assertion that the Bantli et al. '391 reference describes the use of a metallized ink is misplaced. Rather, as discussed above, Bantli et al. '391 merely refers to a vapor coat layer.

Finally, Applicant respectfully points out that the Examiner may have been confusing at least some portions of Bantli et al. '391 with Bantli '571. In particular, the examiner asserts that Bantli '391 at col.6, lines 32+ discloses a non-contiguous metal layer. However, Bantli '391 makes no such disclosure. It appears that the Examiner has mistakenly referred to Bantli '571, which describes gaps between a reflective coating of microspheres at the cited column and line location.

For at least these reasons, Bantli et al. '391 fails to disclose each and every limitation set forth in claims 1-2, as amended. For at least these reasons, the Examiner has failed to establish a prima facie case of anticipation of Applicant's claims 1-2 under 35 U.S.C. 102(b). Withdrawal of this rejection is requested.

Claim Rejections Under 35 U.S.C. § 103

Claims 4-5

In the Office Action, the Examiner rejected claims 4 and 5 under 35 U.S.C. 103(a) as being unpatentable over Bantli et al. '391 in view of U.S. 5,844,523 to Brennan et al. ("Brennan et al."). In addition, the Examiner rejected claims 6-9 under 35 U.S.C. 103(a) as being unpatentable over Bantli et al. '391 in view of Bantli et al. '571. Applicant respectfully traverses these rejections to the extent such rejections may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

¹ Page 9, lines 5-12, 23-25.

In regard to claim 4, the Examiner acknowledged that Bantli et al. '391 "fails to disclose a reflective layer having a metal content of about 10% by volume." To overcome this deficiency, the Examiner seeks to modify the reflective layer described by Bantli et al. '391 according to the teachings of Brennan et al. In particular, the Examiner stated that Brennan et al. describes use of "laminated structures having thermoplastic elastomeric and conductive layers, which includes metallic silver layer and 5% to about 60% by volume." On this basis, the Examiner concluded that it would have been obvious to modify the reflective layer described by Bantli et al. '391 to include the laminated structures as taught by Brennan et al. This assertion fails for a number of reasons.

First, neither Bantli et al. '391 nor Brennan makes any mention of a reflective layer comprising a metallized ink, let alone the use of an ink having a metal content of about 10% to 14% by volume, as recited by claim 4. Thus, even if the modification proposed by the examiner could be achieved in Bantli et al. '391, Applicant's claimed invention would not be realized.

Moreover, it appears that the Examiner has completely misinterpreted Brennan et al. The passages of Brennan et al. relied on by the Examiner refer to insulative "filler" that is added to a thermoplastic elastomer at about 5% to 60% by volume. In other words, the passage relied upon by the Examiner does not even refer to metallic particles, let alone metallized ink. The Examiner seeks to modify the vapor-coated layer of Bantli et al. '391 with insulative filler described by Brennan et al. to achieve a reflective layer comprising metallized ink having metal content of about 10%-14% by volume, as recited by Applicant's claim 4. The modification proposed by the Examiner not only fails to achieve Applicant's claimed invention, but is clearly unworkable.

Claims 6-9

Applicant has amended independent claim 9 to include subject matter similar to that of originally filed claim 6. As amended, claim 9 recites an optical article that includes optical elements comprising microspheres embedded in a spacing resin, the optical article having an optical surface and an opposite structured rear surface formed from the spacing resin. Claim 9 further requires that the reflective layer is a non contiguous metallized layer deposited on at least a portion of the structured rear surface of the optical article. The applied references fail to disclos

or suggest the inventions defined by claim 9, as amended, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

The Examiner stated that Bantli et al. '391 "fails to disclose an optical article that includes glass microspheres embedded in a spacing resin." To overcome this deficiency, the Examiner seeks to modify the retroreflective sheeting described by Bantli et al. '391 to incorporate a glass microsphere structure as described by Bantli et al. '571. In particular, the Examiner stated that "[I]n view of [Bantli et al. '571], it would have been obvious ... to employ glass microspheres, ... therefore such modification would have been an obvious extension of the teaching of [Bantli et al. '391]." This proposed modification fails to achieve the Applicant's invention as recited by claim 9 for a number of reasons.

In particular, the Examiner cited passages of Bantli et al. '571 that refer to a retroreflective sheet in which microspheres are partially embedded directly into a support layer. Bantli et al. '571 states that a reflective layer may then be vapor deposited on the microspheres and, therefore, "gaps" in the metal reflective layer exist between the embedded microspheres. See generally C.6, L.27-42, specifically C.6, L.38-42: "Gaps 47 exist between each substantially hemispherical reflective coating 46 of each microsphere 42, thereby forming a discontinuous vapor coat layer. The size of the gaps 47 varies depending on the placement of microspheres 42 and distances therebetween." As Bantli et al. '571 makes clear, it is these resultant gaps between the embedded microspheres that allow for effective antennae operation.

Consequently, Bantli et al. '571 fails to describe optical elements comprising microspheres embedded in a spacing resin, where the reflective layer is a non contiguous metallized layer deposited on at least a portion of the structured rear surface of the optical article, recited by Applicant's amended claim 9.

Moreover, the combination proposed by the Examiner is specifically dismissed by Bantli et al. '571. In particular, in column 5, lines 30-47, Bantli et al. '571 describes the use of a resin material for positioning beads and to carry a reflective coating underlying and spaced from the glass beads. Moreover, in other passages, Bantli et al. '571 states that reflective coating applied to the resin results in "a substantially continuous metal reflective coating, preferably vapor deposited aluminum." Bantli et al. '571 indicates that this continuous metal reflective coating may act as a "conductive plane" that "renders the antenna ineffective." In other words, not only

would the modification to Bantli et al. '391 in view of Bantli et al. '571 fail to achieve the elements recited by claim 9, the modification is completely dismissed by Bantli et al. '571 itself as non-functional.

Furthermore, the Examiner has also identified no teaching in the prior art of a motivation to combine the teaching of the applied references. The Court of Appeals for the Federal Circuit has made clear that motivation to combine references must be found in the prior art, and that it is impermissible hindsight for the Examiner to use the motivation stated in Applicant's own disclosure as a blueprint to reconstruct the claimed invention from the prior art.²

It is improper to point to teachings of motivation contained within Applicants' own disclosure.³ Moreover, it is insufficient to merely pull such motivation out of thin air. Rather, the Examiner's rejection must be based on substantial evidence in the record demonstrated that the motivation for making the claimed invention resides in the prior art.⁴ As motivation for the modification to Bantli et al. '391 in view of Bantli et al. '571, the Examiner states that "it would have been obvious ... to employ glass microspheres as a good source of reflective material and a splitter when impinged by a light source wherein a portion of the light is being retroreflected back toward the light source and one portion is transmitted as so to reach the substrate. Furthermore, the glass micosphere (sic) structure reflects a much brighter signal, which makes it possible to distinguish the background bead from any hidden source." Application is unable to locate these statements in the cited references.

For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicant's claims 4-9 under 35 U.S.C. 103(a). Withdrawal of these rejections is requested.

New Claims:

Applicant has added claims 10-12 to the pending application. As described above, the applied references fail to disclose or suggest the inventions defined by Applicant's new claims,

² See *Interconnect Planning Corp. v. Feil*, 227 USPQ 543 (CAFC 1985); see also *In re Fine*, 5 USPQ2d 1596, 1598 (CAFC 1988); see also *In re Gorman*, 18 USPQ 2d 1885, 1888 (CAFC 1991); see also *Al-Site Corp. v. VSI International, Inc.*, 50 USPQ2d 1161, 1171 (CAFC 1999).

³ *In re Oetiker*, 24 USPQ2d at 1445.

⁴ *In re Lee*, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002); *In re Chu*, 36 USPQ2d at 1094.

and provide no teaching that would have suggested the desirability of modification to arrive at the claimed inventions. No new matter has been added by the new claims.

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

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VERSION SHOWING CHANGES PURSUANT TO 37 CFR § 1.121(c)(ii)

1. A combination tag, comprising:
 - a retroreflective article having an optical article and a reflective layer;
 - wherein the optical article includes an optical surface, an opposite rear surface, and a structured surface coextensive with one of the optical surface and the rear surface;
 - wherein the reflective layer comprises a metallized ink deposited on at least a portion of the structured surface of the optical article;
 - a radio frequency-responsive element including an antenna and an integrated circuit, the radio frequency-responsive element having information storage and transmission capabilities adapted to enable an interrogation system to obtain information from the radio frequency-responsive element; and
 - wherein the radio frequency-responsive element is coupled to one of the optical surface or rear surface of the retroreflective article.
2. The combination tag of claim 1 wherein the metallized ink includes a polymer carrier and non-contiguous metal particles.
4. The combination tag of claim 2 wherein the metallized ink has a metal content of about 10% to 14% by volume.
5. The combination tag of claim 2 wherein the metal is silver.
6. The combination tag of claim 1 wherein the optical article includes glass microspheres embedded in a spacing resin, and wherein the optical surface and rear surface are formed from the spacing resin.
7. The combination tag of claim 6 wherein the reflective layer is deposited directly on at least portions of the spacing resin.

8. The combination tag of claim 1, and further comprising security indicia disposed on the optical article.

9. A combination tag, comprising:
a retroreflective article having an optical article and a reflective layer;
wherein the optical article includes optical elements comprising microspheres embedded in a spacing resin, the optical article having an optical surface and an opposite structured rear surface formed from the spacing resin; and
wherein the reflective layer is a non contiguous metallized layer deposited on at least a portion of the structured rear surface of the optical article; and
a radio frequency-responsive element coupled to the rear surface of the article, the radio frequency-responsive element including an antenna and an integrated circuit, the radio frequency-responsive element having information storage and transmission capabilities adapted to enable an interrogation system to obtain information from the radio frequency-responsive element.

10.(New) The combination tag of claim 9 wherein the reflective layer includes a metallized ink deposited on at least a portion of the structured rear surface of the optical article.

11.(New) The combination tag of claim 10 wherein the metallized ink includes a polymer carrier and non-contiguous metal particles.

12.(New) The combination tag of claim 11 wherein the metallized ink has a metal content of about 10% to 14% by volume.